

The population P (in thousands) of Hope City, From 2001 to 2007 is

Year	2001	2003	2005	2007
P	739	802	893	947

a) Find the average rate of growth from 2001 to 2005

$$\frac{P(2005)-P(2001)}{2005-2001} = \frac{893-739}{4} = \frac{154}{4} = 38.5 \text{ thousand people per year}$$

b) Find the average rate of growth from 2005 to 2007

$$\frac{P(2007)-P(2005)}{2007-2005} = \frac{947-893}{2} = \frac{54}{2} = 27 \text{ thousand people per year}$$

c) Find the instantaneous growth in 2005 by taking the average of two average rates of change.

$$\frac{38.5+27}{2} = \frac{65.5}{2} = 32.75 \text{ thousand people per year}$$